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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,382	02/28/2002	Tatsuya Tomaru		8164

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EXAMINER

FLORES RUIZ, DELMA R

ART UNIT PAPER NUMBER

2828

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,382

Applicant(s)

TOMARU ET AL.

Examiner

Delma R. Flores Ruiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/8/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 26, and 28 – 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomaru et al. (6,229,835).

Regarding claim 26, Tomaru discloses a solid-state laser comprising a laser (see Fig. 10, Character 31) cavity where pumping light is introduced into a gain crystal (see Fig. 10, Character 1) via a focusing lens (see Fig. 10, Character 32) and a dichroic concave mirror (see Fig. 10, Character 2), wherein said focusing lens is tilted with respect to the optical axis of the pumping light so that a focusing point of the pumping light in a sagittal plane and a focusing point of the pumping light in a tangential plane in the gain crystal at least approximately coincide with focusing points in the respective

planes in the gain crystal in a cavity mode; focusing point, a focal length of the focusing lens having a plano-convex shape, a focal length of the focusing lens for a tangential plane, a an ABCD matrix from an exit plane of the pumping light source to an arbitrary plane inside the gain crystal, and the ABCD matrix M_{17t} from the exit plane of the pumping light source to the arbitrary plane inside the gain crystal (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a focusing point, a focal length of the focusing lens having a plano-convex shape, a focal length of the focusing lens for a tangential plane, a an ABCD matrix from an exit plane of the pumping light source to an arbitrary plane inside the gain crystal, and the ABCD matrix M_{17t} from the exit plane of the pumping light source to the arbitrary plane inside the gain crystal, because when changing the variables of each function can be obtained the wished results and therefore said limitations are said to be inherently disclosed in the teachings of Tomaru).

Regarding claim 28, Tamaru discloses a the pumping light incident plan of the gain crystal is polished to have the Brewster angle or to be deviated from the right angle with respect to the optical axis of the cavity mode (see Figs. 6 – 7, 10).

Regarding claim 29, Tamaru discloses a pumping light incident plane of the gain crystal is polished to have a right angle with respect to the optical axis of the cavity mode (see Figs. 1 – 4, Column 2, Lines 61 – 67, Column 3, Lines 1 – 2).

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Regarding claims 30, 31, and 32, Tamaru discloses a tilting angle of the focusing lens is changed within a certain range around the predetermined tilting angle at which the focusing points of the pumping light in the sagittal and tangential planes in the gain crystal at least approximately coincide with the focusing points in the respective plane in the gain crystal in the cavity mode (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a focusing lens is changed within a certain range around the predetermined tilting angle at which the focusing points of the pumping light in the sagittal and tangential planes in the gain crystal at least approximately coincide with the focusing points in the respective plane in the gain crystal in the cavity mode, and therefore said limitations are said to be inherently disclosed in the teachings of Tamaru).

Regarding claim 33, Tamaru discloses plate for beam axis adjustment to be disposed between the pumping light source and the focusing lens (see Figs 1 – 10).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27 and 34 – 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Weingarten et al (5,987,049).

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Regarding claim 27, Weingarten disclose a solid-state laser comprising:

(a) a laser cavity having a gain crystal and two end mirrors (see Fig. 1, Characters 13 and 14); (b) a pumping light source (see Fig. 1, Character 3) for supplying pumping light to be led to the gain crystal; (c) a dichroic concave (see Fig. 1, Character 13) mirror for introducing the pumping light to the gain crystal and constructing the laser cavity or deriving outgoing light; and (d) a lens for focusing (see Fig. 1, Character 32) the pumping light on the inside of the gain crystal in the laser cavity, wherein the focusing lens is tilted with respect to the optical axis of the pumping light so that the focusing point of the pumping light in a sagittal plane and that in a tangential plane in the gain crystal at least approximately coincide with the focusing points in the respective planes in the gain crystal in the cavity mode; (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a focusing point, a focal length of the focusing lens having a plano-convex shape, a focal length of the focusing lens for a tangential plane , a an ABCD matrix from an exit plane of the pumping light source to an arbitrary plane inside the gain crystal, and the ABCD matrix M_{17t} from the exit plane of the pumping light source toe the arbitrary plane inside the gain crystal, because when changing the variables of each function can be obtained the wished results and therefore said limitations are said to be inherently disclosed in the teachings of Weingarten).

Regarding claim 34, Weingarten discloses a the pumping light incident plane of the gain crystal is polished to hace the Brewster angle or to be deviated from the right angle with respect to the optical axis of the cavity mode (see Fig. 1).

Regarding claim 35, Weingarten discloses a pumping light incident plane of the gain crystal is polished to have a right angle with respect to the optical axis of the cavity mode (see Fig. 1, Column 6, Lines 14 – 29).

Regarding claims 36, 37, and 38, Weingarten discloses a tilting angle of the focusing lens is changed within a certain range around the predetermined tilting angle at which the focusing points of the pumping light in the sagittal and tangential planes in the gain crystal at least approximately coincide with the focusing points in the respective plane in the gain crystal in the cavity mode (said limitation only recites facts and features that are well known and expected, the same features that essentially result from the use or application of a focusing lens is changed within a certain range around the predetermined tilting angle at which the focusing points of the pumping light in the sagittal and tangential planes in the gain crystal at least approximately coincide with the focusing points in the respective plane in the gain crystal in the cavity mode, and therefore said limitations are said to be inherently disclosed in the teachings of Weingarten).

Regarding claim 39, Weingarten discloses plate for beam axis adjustment to be disposed between the pumping light source and the focusing lens (see Figs 1).

Regarding claim 40, Weingarten discloses a laser cavity comprises a gain crystal (see Fig. 4, Character 2) whose pumping light incident plane is polished to be normal to the optical axis of the cavity mode, a concave mirror (see Fig. 4 Character 14) and a Littrow prism (see Fig. 4, Character 16) and the pumping light (see Fig. 4, Character 3) incident plane of the gain crystal and the plane opposite to a light incident plane of the Littrow prism serve as end mirrors (see Fig. 4).

Regarding claim 41, Weingarten discloses a laser cavity comprises a dichroic concave mirror (see Fig. 4, Character 14) a gain crystal (see Fig. 4, Character 2) and an end mirror (see Fig. 4, Character 13), the pumping light (see Fig. 4, Character 3), incident plane of the gain medium is polished to have the Brewster angle, and the pumping light enters the gain crystal via the dichroic concave mirror.

Response to Arguments

Applicant's arguments with respect to claims 26 – 41 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.



Delma R. Flores Ruiz

Examiner

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DRFR/PI

November 3, 2203



Paul Ip

Supervisor Patent Examiner

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